THE CLAIMS

1. (Currently amended) A system comprising:

a first robotic arm assembly for capturing and releasing a semiconductor wafer, the first robotic arm having at least two degrees of freedom;

a second robotic arm for capturing and releasing an interleaf, the second robotic arm having first and second ends and at least two degrees of freedom;

an end effector attached to the second end of the second robotic arm, the end effector configured to apply positive pressure to a surface of the interleaf facing the end effector for capture and release thereof and having a sensor to detect a proximity and engagement of the interleaf with the end effector, the sensor for determining a reduction in said positive pressure; and

a controller for actuation of the first and second robotic arms, the first and second robotic arms operating substantially simultaneously.

2. (Previously presented) The system according to claim 1 wherein the second robotic arm comprises:

a transfer arm having a first end and a second end, the arm being mounted to a second arm base; and

a counterweight attached to the first end of the transfer arm.

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Previously Presented) The system according to claim 1 wherein the sensor uses differential pressure, reflectance, imaging, capacitance, or inductance to detect proximity and engagement of the interleaf.

7. (Currently Amended) The system according to claim 1 further comprising a detection sensor to detect the material properties of the interleaf.

8. (Currently Amended) The system according to claim 7 wherein the detection sensor uses differential pressure, reflectance, imaging, capacitance, or inducting to detect the material properties of the interleaf.

9. (Previously Presented) The system according to claim 1 wherein the end effector arm further comprises electrodes to provide an electrostatic charge for capturing the interleaf.

10. (Original) The system according to claim 2 wherein the end effector is slidably disposed in a substantially vertical orientation at the second end of the transfer arm.

11. (Original) The system according to claim 10 wherein the end effector is configured to vertically actuate independently of the base.

12. (Original) The system according to claim 1 wherein at least one of the robotic arms is pneumatically actuated.

13. (Original) The system according to claim 1 wherein at least on of the robotic arms is actuated with electric servo motors.

14. (Previously Presented) The system according to claim 1 comprising an interleaf cassette holder including a pneumatic separator for separation of the interleafs, wherein the pneumatic separator co-acts with the end effector to capture the interleaf.

15. (Previously Presented) An assembly comprising:

a transfer arm having a first and a second end, the arm being mounted to a second arm base;

a counterweight attached to the first end of the transfer arm;

an end effector attached to a second end of the transfer arm, the end effector configured to apply positive pressure to a surface of the substrate facing the end effector; and

a pneumatic separator for separation of the interleafs, wherein the pneumatic separator is actuated in sequence with the end effector to facilitate capturing of an interleaf.

16. (Cancelled)

17. (Currently Amended) An assembly according to claim 15 further comprising a detection sensor to detect the material properties of the substrate when coupled to the end effector.

18. – 24. (Withdrawn)

25. (Previously presented) The system according to claim 2 wherein the end effector is configured to apply variable pressure forces to capture and release the interleaf.

26. (Previously Presented) The system according to claim 1 wherein the end effector is configured to sequentially apply negative and positive pressures to capture and release the interleaf.

27. (Previously Presented) The assembly according to claim 15 wherein the end effector is configured to sequentially apply positive and negative pressures to the substrate.